Factor Stability and Construct Validation
of Yukl's MBS (Managerial Behavior Survey) for Military Leadership

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Abstract

Yukl's new, complex taxonomy of leader behavior has been
examined in a variety of contexts including that of military
leadership. As with all new concepts and instruments, however,
replication is necessary. This paper presents an effort to
establish, through data collected at two points in time for the
same organization, that Yukl's MBS does display both stability
in the factors obtained for these two time periods and that
those factors do indeed represent the 23 dimensions covered by
the instrument. While the sample used is a military cadet
sample rather than one of regular military officers, these
results are sufficiently encouraging to suggest that more
research should be performed using this new taxonomy.
Directions that such research could take are discussed in light
of these and other results.

Introduction

Much previous research on leadership in general and military leadership
in particular has been limited for at least two major reasons. First, an
overly simplistic conceptualization of leader behavior has been all too
frequently used in that research. That usual dichotomy of task- and
maintenance-oriented (structure and consideration, production-centered and
people-centered, etc.), while highly generalizable, is hardly very useful for
the development of training and developmental materials or in selection and
evaluation. Second, the overwhelming strategy in much of the existing
research is to use a single point in time (cross-sectional analysis) and a
single method (usually the questionnaire-correlational method). While
certainly convenient and useful in the early stages of research, this strategy
must give way to improved ones if we are to press the boundaries of knowledge
further in this area.

Yukl (1981) has presented a new taxonomy of effective leader behavior
designed to overcome the first limitation noted above. His taxonomy is at an

intermediate level of analysis, that is, at a more specific, detailed level than the usual task- and maintenance-oriented level and yet not so detailed and specific as individual job analysis would be. The application of that taxonomy to military leadership has already been successfully demonstrated in a multi-method study (Yukl and Van Fleet, 1982). Thus, a first step has been taken to overcome the limitations of the past in order to make substantial progress for the future.

Purpose

The purpose of this paper is to present some evidence regarding the factor stability and construct validity of the new taxonomy for military leadership. In doing this, a second step will be taken in that a comparative analysis of data from two points in time will be performed rather than merely using cross-sectional data as in the past.

Method

The sample utilized in this study consisted of members of the Texas A&M University Corps of Cadets. The Corps is organized into military units; its members wear uniforms while on campus and participate in frequent drill, formations, and military ceremonies; and many of the members of the Corps are in the ROTC programs of the several services. In fact, over 14,000 officers have been commissioned through the Corps, and more that 100 of them have attained general officer rank.

The method consisted of administering Yukl's Managerial Behavior Survey (MBS) at two points in time. The first administration was after the first full semester (early in the Spring Semester) while the second administration was near the end of the second full semester (late in the Spring Semester). This assured that those asked to provide information about the leaders would have had ample opportunity to interact with and observe those leaders and that the two points in time were reasonably separated (about three months). Participation was voluntary so that the second administration resulted in a lower participation rate than did the first (597 observations for Time One and 261 for Time Two).

A factor analysis was performed for each time period. From these results, then, two analyses were possible. First, the number of factors obtained, the percent of variance accounted for by those fators, and the specific content of those factors can be compared to examine the factor stability of the MBS. Second, the specific content of the factors can be compared to the categories in the taxonomy as coded in the scoring of the questionnaire to see if the factor analysis is indeed extracting factors which correspond to those categories.

Results

As is obvious from Figure 1, both factor stability and construct validation were demonstrated for this sample. The number of factors obtained is nearly identical: the percent of variation accounted for is remarkably consistent; and the content of the factors is very similar. All of this assures that the MBS instrument does possess factor stability for this sample. Coupled with previous results (Yukl, 1982), the evidence is very strong that

this instrument possesses factor stability as well as good reliability (see Yukl and Nemeroff, 1979).

Insert Figure 1 About Here

The content of the factors relative to the categories from the taxonomy was examined by comparing the five items which were scored to yield the categories from the taxonomy with the highest loaded five to ten (out of 115) items from the factor analysis. For the first time period, where the sample size was much better for performing factor analysis, 21 of the factors have, as the five highest loaded items, the five which define a particular category. That number is increased to 22 of the 23 when the top 10 highest loaded items are examined. One other factor had four of the five loaded on it. For the second time period the results are also quite strong although not so overwhelming as with the first time period. These results, then, strongly suggest that the MBS displays construct validity in that extracted factors correspond extremely well to the categories from the taxonomy represented by that instrument.

Conclusions

The data presented here strongly suggest that Yukl's Managerial Behavioral Survey (MBS) possesses both factor stability and construct validity as well as previously demonstrated reliability. This means that the MBS can, indeed, be used with military samples to extend our knowledge about effective leader behavior. Such extensions will be even more meaningful, of course, if the research strategies used go beyond single method, single time strategies. If future research will use this more realistic, complex taxonomy in more useful and more complex research strategies, much can be learned about leadership in general and military leadership in particular which can be particularly useful in selection, evaluation, training, and development of future military officers.

References

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Figure 1

Factor Stability and Construct Validation of MBS Categories

Scale	Time One Number of Items Defining Scale Loaded Among Highest on Factor (maximum is five)		Time Two Number of Items Defining Scale Loaded Among Highest on Factor (maximum is five)	
	Highest Five	Highest Ten	Highest Five	Highest Ten
Showing Consideration	5	5	5	5
Providing Praise and Recognition	5	5	5	5
Training-Coaching	5	5	5	5
Disseminating Information	5	5	5	5
Encouraging Decision Participation	5	5	5	5
Delegating	5	5	5	5
Innovation	5	5	5	5
Facilitating the Work	5	5	5	5
Monitoring the Environment	5	5	5	5
Representing the unit	5	5	5	5
Managing Conflict	5	5	5	5
Emphasizing Performance	5	5	4	5
Inspiring Subordinates	5	5	4	5
Goal Setting	5	5	4	5
Planning	5	5	4	5
Criticizing	5	5	4	5
Career Counseling	4	5	5	5
Problem Solving	5	5	4	4
Clarifying Work Roles	5	5	3	4
Administering Discipline	5	5	3	4
Facilitating Cooperation and Teamwork	5	5	2	2
Monitoring Operations	5	5	1	1
Structuring Reward Contingencies	4	4	4	4

Percent of Variance Accounted for by:		
23 factors corresponding to scales	70.78	78.74
all factors extracted	75.54	83.60

Total Number of Factors Obtained	25	26
Number of Observations	597	261